

Application No.: 10/055,499

Docket No.: JCLA8534-R

AMENDMENTS**IN THE CLAIMS:****Claims 1-203. (canceled)**

204. (new) A chip packaging method comprising:

providing a substrate comprising an organic material;

joining multiple dies and said substrate;

depositing a metal layer over said dies; and

cutting said substrate.

205. (new) The method of claim 204, wherein said dies perform same functions.

206. (new) The method of claim 204, wherein said dies perform different functions.

207. (new) The method of claim 204 further comprising depositing a polymer layer over said substrate and surrounding said dies.

208. (new) The method of claim 207, after said depositing said polymer layer over said substrate, further comprising polarizing said polymer layer.

209. (new) The method of claim 208, wherein said polymer layer is polarized using a process comprising etching.

210. (new) The method of claim 208, wherein said polymer layer is polarized using a process comprising grinding.

211. (new) The method of claim 207, wherein said metal layer is formed further over said polymer layer.

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212. (new) The method of claim 207, wherein said polymer layer has a top surface substantially coplanar with a top surface of at least one of said dies

213. (new) The method of claim 204 further comprising providing an adhesive layer adhering said dies to said substrate.

214. (new) The method of claim 213, wherein said adhesive layer comprises a conductive paste.

215. (new) The method of claim 213, wherein said adhesive layer comprises an adhesive tape.

216. (new) The method of claim 204, after said joining said dies and said substrate, further comprising depositing a dielectric layer over said dies, followed by depositing said metal layer over said dielectric layer.

217. (new) The method of claim 216, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

218. (new) The method of claim 204, after said depositing said metal layer over said dies, further comprising depositing a dielectric layer over said metal layer.

219. (new) The method of claim 218, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

220. (new) The method of claim 204, wherein said metal layer is formed over said dies using a process comprising electroplating.

221. (new) The method of claim 204, wherein said metal layer is formed over said dies using a process comprising sputtering.

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222. (new) The method of claim 204, after said depositing said metal layer over said dies, further comprising depositing multiple bonds connected to said metal layer.

223. (new) The method of claim 222, wherein said bonds have a principal material comprising solder.

224. (new) The method of claim 222, wherein said bonds have a principal material comprising gold.

225. (new) The method of claim 204, wherein at least one of said dies has an active surface, over which said metal layer is formed, and a backside joined with said substrate.

226. (new) The method of claim 204, wherein said substrate is formed using a process comprising pressing multiple insulation layers, said substrate not having metal traces.

227. (new) The method of claim 204, wherein said substrate is formed using a process comprising molding.

228. (new) The method of claim 204, wherein said substrate comprises polymer.

229. (new) The method of claim 204, wherein said substrate comprises thermosetting plastic.

230. (new) The method of claim 204, after said depositing said metal layer over said dies, further comprising depositing a dielectric layer over said metal layer and then depositing another metal layer over said dielectric layer.

231. (new) The method of claim 230, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

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232. (new) The method of claim 204, wherein multiple chip packages are formed after said cutting said substrate, at least one of said chip packages having one of said dies.

233. (new) A chip packaging method comprising:

providing a die having at a first pad;

depositing a metal layer over said die, said metal layer having a second pad, wherein said second pad is electrically connected to said first pad, and said second pad has a layout different from that of said first pad; and

depositing a bump over said second pad, wherein said bump has a principal material comprising gold.

234. (new) The method of claim 233 further comprising joining said die and a substrate, followed by said depositing said metal layer over said die.

235. (new) The method of claim 234, after said depositing said bump over said second pad, further comprising cutting said substrate.

236. (new) The method of claim 234 comprising providing an adhesive layer adhering said die to said substrate.

237. (new) The method of claim 236, wherein said adhesive layer comprises a conductive paste.

238. (new) The method of claim 236, wherein said adhesive layer comprises an adhesive tape.

239. (new) The method of claim 234, wherein said substrate is formed using a process comprising pressing multiple insulation layers, said substrate not having metal traces.

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240. (new) The method of claim 234, wherein said substrate is formed using a process comprising molding.

241. (new) The method of claim 234, wherein said substrate comprises polymer.

242. (new) The method of claim 234, wherein said substrate comprises thermosetting plastic.

243. (new) The method of claim 234 further comprising depositing a polymer layer over said substrate and surrounding said die.

244. (new) The method of claim 243, after said depositing said polymer layer over said substrate, further comprising polarizing said polymer layer.

245. (new) The method of claim 244, wherein said polymer layer is polarized using a process comprising etching.

246. (new) The method of claim 244, wherein said polymer layer is polarized using a process comprising grinding.

247. (new) The method of claim 243, wherein said metal layer is formed further over said polymer layer.

248. (new) The method of claim 243, wherein said polymer layer has a top surface substantially coplanar with a top surface of said die.

249. (new) The method of claim 233 further comprising depositing a dielectric layer over said die, followed by depositing said metal layer over said dielectric layer.

250. (new) The method of claim 249, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

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251. (new) The method of claim 233, after said depositing said metal layer over said die, further comprising depositing a dielectric layer over said metal layer.

252. (new) The method of claim 251, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

253. (new) The method of claim 233, wherein said metal layer is formed over said die using a process comprising electroplating.

254. (new) The method of claim 233, wherein said metal layer is formed over said die using a process comprising sputtering.

255. (new) A chip packaging method comprising:

joining a die and a substrate; and

depositing a bump over said substrate, wherein said bump has a principal material comprising gold.

256. (new) The method of claim 255, wherein said die has an active surface and a backside joined with said substrate, said active surface of said die being at a horizontal level, said bump deposited over said horizontal level.

257. (new) The method of claim 256, after said joining said die and said substrate; further comprising depositing a metal layer over said horizontal level, followed by depositing said bump over said metal layer.

258. (new) The method of claim 257, after said joining said die and said substrate, further comprising depositing a dielectric layer over said horizontal level, followed by depositing said metal layer over said dielectric layer.

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259. (new) The method of claim 258, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

260. (new) The method of claim 257, after said depositing said metal layer over said horizontal level, further comprising depositing a dielectric layer over said metal layer.

261. (new) The method of claim 260, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

262. (new) The method of claim 257, wherein said metal layer is formed over said horizontal level using a process comprising electroplating.

263. (new) The method of claim 257, wherein said metal layer is formed over said horizontal level using a process comprising sputtering.

264. (new) The method of claim 256, after said joining said die and said substrate, further comprising depositing a first metal layer over said horizontal level, depositing a dielectric layer over said first metal layer, and depositing a second metal layer over said dielectric layer, followed by depositing said bump over said second metal layer.

265. (new) The method of claim 264, wherein said dielectric layer comprises polyimide, benzocyclobutene, porous dielectric material or stress buffer material.

266. (new) The method of claim 255, after said depositing said bump over said substrate, further comprising cutting said substrate.

267. (new) The method of claim 255 further comprising depositing a polymer layer over said substrate and surrounding said die.

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268. (new) The method of claim 267, after said depositing said polymer layer over said substrate, further comprising polarizing said polymer layer.

269. (new) The method of claim 268, wherein said polymer layer is polarized using a process comprising etching.

270. (new) The method of claim 268, wherein said polymer layer is polarized using a process comprising grinding.

271. (new) The method of claim 267, wherein said polymer layer has a top surface substantially coplanar with a top surface of said die.

272. (new) The method of claim 267, after said depositing said polymer layer over said substrate, further comprising depositing a metal layer over said die and over said polymer layer, followed by depositing said bump over said metal layer.

273. (new) The method of claim 272, wherein said bump is deposited over said polymer layer.

274. (new) The method of claim 255, further comprising providing an adhesive layer adhering said die to said substrate.

275. (new) The method of claim 274, wherein said adhesive layer comprises a conductive paste.

276. (new) The method of claim 274, wherein said adhesive layer comprises an adhesive tape.

277. (new) The method of claim 255, wherein said substrate is formed using a process comprising pressing multiple insulation layers, said substrate not having metal traces.

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278. (new) The method of claim 255, wherein said substrate is formed using a process comprising molding.

279. (new) The method of claim 255, wherein said substrate comprises polymer.

280. (new) The method of claim 255, wherein said substrate comprises thermosetting plastic.